Focused or questioned? Intonation of polar questions & narrow focus in Urdu/Hindi

Declaratives and polar questions in Urdu/Hindi are string identical and the distinction is claimed to be maintained by the realization of IP boundary tones (Bhatt and Dayal, 2015). A sentence is interpreted as statement when produced with a low IP boundary (L%) and as a polar question when realized with a rising boundary tone (H%). Polar questions in Urdu/Hindi optionally use a question marker kya. The presence or absence of kya is claimed not to affect the overall intonation of polar questions (Butt and Jabeen, 2016). To date, there is no systematic account of the intonation of questions with polar kya placed at different positions and the interaction between the positions of polar kya and the questioned constituent. This study aims to fill this gap and offers a detailed account of the intonation of polar questions with polar kya and the questioned constituent placed at different positions in the sentence. It also investigates if the intonation of the questioned constituents differs from that of their counterparts produced in broad and narrow focus and when so, if this influences their prosodic structure.

For the experiment, 12 speakers of Urdu from Punjab, Pakistan were presented with a set of five ditransitive sentences as polar questions as well as declaratives in broad and narrow focus. Broad focus was elicited using the context question ‘What happened’ and narrow focus was evoked by using a wh-question and the constituent answering that question was considered as narrowly focused (Rooth, 1985; Krifka, 2008). All the sentences were presented in default word order (SOOV). In each polar question, one constituent was highlighted in the text and the participants were asked to produce the question in a way that indicated the questioned constituent. In these sentences, polar kya was placed at either the sentence initial, medial, immediately pre-verbal or final position and the questioned constituent occurred to either the left or right of polar kya. For each position of kya, all the sentences were also presented without any indication regarding the questioned constituent and the participants were free to question any constituent they wanted. This was done to investigate if speakers preferred to question a certain constituent on the basis of the position of kya. For phonetic analysis, the target sentences were divided manually into syllables. F0 troughs and peaks in each constituent were labeled manually as Ls and Hs respectively. Their F0 was extracted using a Praat script.

The results show that the high IP boundary tone is not the default feature of polar questions. Figure 1 shows that regardless of the position of questioned constituent, polar questions were frequently produced with a low boundary tone. The high boundary tones occurred mostly when the sentence final verb was questioned. This shows that the high IP boundary tone did not result from an association between polar questions and high boundaries. The realization of boundary tones with polar kya placed at different position shows a similar pattern.

![Figure 1: IP boundary tones in polar questions.](image)

When the polar questions were presented without any indication regarding the questioned
constituent, participants preferred to make the verbal complex prominent (verb:54%, immediately preceding nominative object: 23%). This explains the misperception in existing literature regarding the association of polar questions with high IP boundary tones. Moreover, this preference was not affected by the position of polar *kyaa*.

Table 1 presents the scaling of F0 peaks on prominent constituents in polar questions. It shows that regardless of the position of polar *kyaa*, the F0 peaks on the prominent constituents were scaled higher than their counterparts produced in wide and narrow focus. Moreover, while the narrowly focused constituent did not carry the highest F0 peak in the sentence, the questioned constituent in polar questions did.

<table>
<thead>
<tr>
<th>Prominence</th>
<th>Initial kya</th>
<th>Medial kya</th>
<th>Preverbal kya</th>
<th>Final kya</th>
<th>Wide</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP1</td>
<td>8.85</td>
<td>9.2</td>
<td>8.8</td>
<td>9.04</td>
<td>3.44</td>
<td>5.2</td>
</tr>
<tr>
<td>NP2</td>
<td>9.04</td>
<td>9.03</td>
<td>8.4</td>
<td>9.02</td>
<td>2.8</td>
<td>4.06</td>
</tr>
<tr>
<td>NP3</td>
<td>7.7</td>
<td>8.3</td>
<td>7.9</td>
<td>7.3</td>
<td>0.28</td>
<td>1.66</td>
</tr>
<tr>
<td>Verb</td>
<td>9.6</td>
<td>10.11</td>
<td>9.6</td>
<td>8.1</td>
<td>No rise</td>
<td>No rise</td>
</tr>
</tbody>
</table>

Table 1: F0 peak scaling in semitones calculated with reference to immediately preceding L.

Furthermore, it was found that all the consecutive F0 peaks in declaratives produced in wide focus were downstepped. However, in polar questions, the questioned constituent, notwithstanding its linear position, carried the highest F0 peak and the widest F0 range in the sentence. Thus the pattern of downstep was disrupted when the questioned constituent was placed at a non-initial position. Moreover, in narrow focus, it was the F0 peak immediately preceding the focused constituent that was upstepped but the focused constituent itself did not have the highest F0 peak in the sentence. This shows that the intonation of polar questions overall and the questioned constituent itself differs from that of declaratives in broad and narrow focus.

Based on this, it is proposed that the phonetic difference in the realization of questioned and narrowly focused constituents is indicative of their variable phonological structure. Following Jabeen (2019), a recursive IP boundary is proposed on the left edge of the focused constituent (1-a). A polar question, however, has no embedded IPs (1-b).

(1)  a. (NP NP$_{1P}$ NP$_{F}$ Verb)$_{1P}$ Preverbal focus
    b. (NP NP NP$_{Q}$ Verb)$_{1P}$ Preverbal questioned constituent

The difference in the phonetics and phonology of narrow focus and interrogativity in polar questions is interpreted as different manifestations of prominence in Urdu/Hindi.

References

Bhatt, Rajesh and Dayal, Veneeta. 2015. Polar Questions and Disjunction: clues from Hindi-Urdu polar *kyaa*, talk given at the University of Texas, Arlington.


